

**PCT:**

(PCT Rule 61.2)

**Assistant Commissioner for Patents  
United States Patent and Trademark  
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Washington, D.C.20231  
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in its capacity as elected Office

• 29 May 2000 (29.05.00)

**PCT/AU99/00930**

AGS02584.011

27 October 1999 (27.10.99)

27 October 1998 (27.10.98)

MAILER, Robert, Lindsay

- ☒ in the demand filed with the International Preliminary Examining Authority on:

11 May 2000 (11.05.00)

- ☐ in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

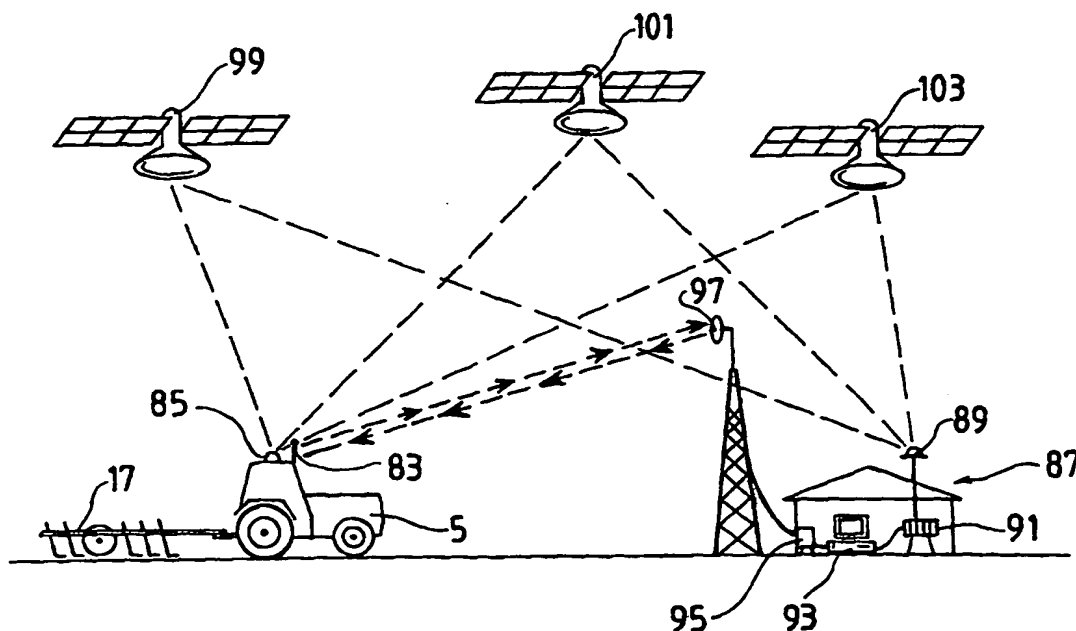
Facsimile No.: (41-22) 740.14.35

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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification <sup>6</sup> : <b>A01B 79/00, G01C 21/00, G06F 17/00, G05D 1/02</b>		A1	(11) International Publication Number: <b>WO 00/24239</b>
			(43) International Publication Date: <b>4 May 2000 (04.05.00)</b>
(21) International Application Number: <b>PCT/AU99/00930</b> (22) International Filing Date: <b>27 October 1999 (27.10.99)</b> (30) Priority Data: PP 6795                      27 October 1998 (27.10.98)                      AU (71) Applicant (for all designated States except US): <b>AGSYSTEMS PTY. LTD. [AU/AU]; 101 Riverside Drive, West End, QLD 4101 (AU).</b> (72) Inventor; and (75) Inventor/Applicant (for US only): <b>MAILER, Robert, Lindsay [AU/AU]; 1/21 Orleigh Street, West End, QLD 4101 (AU).</b> (74) Agent: <b>PIZZEYS PATENT AND TRADE MARK ATTORNEYS; Telstra House, Level 11, 167 Eagle Street, Brisbane, QLD 4000 (AU).</b>			(81) Designated States: <b>AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</b>  <b>Published</b> <i>With international search report.</i>

(54) Title: **VEHICLE POSITIONING APPARATUS AND METHOD**

## (57) Abstract

There is disclosed a guidance assisting apparatus for aiding in the guidance of an agricultural vehicle (5) over arable land. The apparatus makes use of a GPS positional receiver (81) in order to determine if the vehicle (5) is overlapping previous passes of a paddock thereby reducing the likelihood of strips of land being double processed or left unprocessed. Guidance may be provided by a visual display or by power assisted steering.

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EE	Estonia						

## INTERNATIONAL SEARCH REPORT

 International application No.  
**PCT/AU 99/00930**
**A. CLASSIFICATION OF SUBJECT MATTER**Int Cl<sup>6</sup>: A01B 79/00, G01C 21/00, G06F 17/00, G05D 1/02

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**
 Minimum documentation searched (classification system followed by classification symbols)  
 G05D 1/02, A01B, G01C 21/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

 Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
 WPAT
**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 5928309 (Korver et al.) 27 July 1999 See whole document.	1-12
X	Wo 98/46065 (Carnegie Mellon University) 22 October 1998 See whole document	1-8, 10-12

☐ Further documents are listed in the  
 continuation of Box C

☒ See patent family annex

## \* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

 Date of the actual completion of the international search  
 9 December 1999

Date of mailing of the international search report

**17 DEC 1999**
 Name and mailing address of the ISA/AU  
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# **INTERNATIONAL SEARCH REPORT**

## **Information on patent family members**

International application No.  
**PCT/AU 99/00930**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member	
WO 9846065	AU 71106/98	US 5968546
END OF ANNEX		

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 99/00930

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>		
Int Cl <sup>6</sup> : A01B 79/00, G01C 21/00, G06F 17/00, G05D 1/02		
According to International Patent Classification (IPC) or to both national classification and IPC		
<b>B. FIELDS SEARCHED</b>		
Minimum documentation searched (classification system followed by classification symbols) G05D 1/02, A01B, G01C 21/00		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPAT		
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 5928309 (Korver et al.) 27 July 1999 See whole document	1-12
X	Wo 98/46065 (Carnegie Mellon University) 22 October 1998 See whole document	1-8, 10-12
<input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
<p>* Special categories of cited documents:</p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier application or patent but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>"&amp;" document member of the same patent family</p>		
Date of the actual completion of the international search 9 December 1999		Date of mailing of the international search report 17 DEC 1999
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929		Authorized officer  Michael C Lander Telephone No.: (02) 6283 2494

**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members****International application No.**  
**PCT/AU 99/00930**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report	Patent Family Member
WO 9846065	AU 71106/98      US 5968546
END OF ANNEX	

**PATENT COOPERATION TREATY**  
**PCT**

**INTERNATIONAL PRELIMINARY EXAMINATION REPORT**

(PCT Article 36 and Rule 70)

44

REC'D 28 MAR 2001	
WIPO	PCT

Applicant's or agent's file reference 3206/BBE/CG	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. <b>PCT/AU99/00930</b>	International Filing Date ( <i>day/month/year</i> ) 27 October 1999	Priority Date ( <i>day/month/year</i> ) 27 October 1998
International Patent Classification (IPC) or national classification and IPC  Int. Cl. <sup>7</sup> A01B 79/00, G01C 21/00, G06F 17/00, G05D 1/02		
Applicant  AGSYSTEMS PTY LTD et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.																								
2.	<p>This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of      sheet(s).</p>																								
3.	<p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 5%;">I</td> <td style="width: 5%; text-align: center;"><input checked="" type="checkbox"/></td> <td>Basis of the report</td> </tr> <tr> <td>II</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Priority</td> </tr> <tr> <td>III</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>IV</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Lack of unity of invention</td> </tr> <tr> <td>V</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>VI</td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Certain documents cited</td> </tr> <tr> <td>VII</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Certain defects in the international application</td> </tr> <tr> <td>VIII</td> <td style="text-align: center;"><input type="checkbox"/></td> <td>Certain observations on the international application</td> </tr> </table>	I	<input checked="" type="checkbox"/>	Basis of the report	II	<input type="checkbox"/>	Priority	III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input type="checkbox"/>	Lack of unity of invention	V	<input checked="" type="checkbox"/>	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input checked="" type="checkbox"/>	Certain documents cited	VII	<input type="checkbox"/>	Certain defects in the international application	VIII	<input type="checkbox"/>	Certain observations on the international application
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VI	<input checked="" type="checkbox"/>	Certain documents cited																							
VII	<input type="checkbox"/>	Certain defects in the international application																							
VIII	<input type="checkbox"/>	Certain observations on the international application																							

Date of submission of the demand 11 May 2000	Date of completion of the report 20 March 2001
Name and mailing address of the IPEA/AU  AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer   <b>MICHAEL C. LANDER</b> Telephone No. (02) 6283 2494



**I. Basis of the report****1. With regard to the elements of the international application:\***

- ☒ the international application as originally filed.
- ☐ the description,        pages , as originally filed,  
   pages , filed with the demand,  
   pages , received on    with the letter of
- ☐ the claims,        pages , as originally filed,  
   pages , as amended (together with any statement) under Article 19,  
   pages , filed with the demand,  
   pages , received on    with the letter of
- ☐ the drawings,        pages , as originally filed,  
   pages , filed with the demand,  
   pages , received on    with the letter of
- ☐ the sequence listing part of the description:  
   pages , as originally filed  
   pages , filed with the demand  
   pages , received on    with the letter of

**2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.**

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

**3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, was on the basis of the sequence listing:**

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

**4. ☐ The amendments have resulted in the cancellation of:**

- ☐ the description,        pages
- ☐ the claims,        Nos.
- ☐ the drawings,        sheets/fig.

**5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\***

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-12	YES
	Claims	NO
Inventive step (IS)	Claims 9	YES
	Claims 1-8, 10-12	NO
Industrial applicability (IA)	Claims 1-12	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)**

The following document identified in the International Search Report was considered relevant for the purposes of this report:

WO 98/46065.

Novelty (N) Claims 1-12

The above listed citation does not disclose all of the features of any of the claims. Therefore the claimed invention is novel.

Inventive Step (IS) Claims 1-8, 10-12

When WO 98/46065 is combined with the common general knowledge available to a person skilled in the art of GPS (Global Positioning System) vehicle guidance all of the features of these claims are disclosed. Therefore these claims do not include an inventive step.

See in particular page 2 line 18 to page 3 line 12.

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/AU99/00930

## VI. Certain documents cited

## 1. Certain published documents (Rule 70.10)

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date ( valid claim) (day/month/year)
P, X 5928309	27 July 1999	5 February 1996	5 February 1996

## 2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non- written disclosure (day/month/year)
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